MIAMI-DADE COUNTY, FLORIDA METRO-DADE FLAGLER BUILDING

140 WEST FLAGLER STREET, SUITE 1603 MIAMI, FLORIDA 33130-1563 (305) 375-2901 FAX (305) 375-2908

www.buildingcodeonline.com

NOTICE OF ACCEPTANCE (NOA)

QMI 1661 Glenlake Avenue Itasca, Illinois, 60143

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: ASSA / Residential Bertha Aluminum Accordion Shutter

APPROVAL DOCUMENT: Drawing No. 05-129, titled "ASSA/ Residential Bertha Accordion Shutter", sheets 1 through 10 of 10, and sheet 1A of 10, prepared by Tilteco, Inc., dated 06/01/2005, last revision #1 dated June 01, 2005, signed and sealed by Walter A. Tillit Jr., P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by Miami-Dade County Product Control Division.

MISSILE IMPACT RATING: Large and Small Missile Impact

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and the following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA #02-0429.08 and consists of this page 1, evidence submitted page(s) as well as approval document mentioned above.

Helmy A. Mefor 10/06/2005

The submitted documentation was reviewed by Helmy A. Makar, P.E.

NOA No 05-0817.06 Expiration Date: 05/10/2007 Approval Date: 10/06/2005

Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #02-0429.08 1. A.

DRAWINGS

Drawing No. 02-260, titled "ASSA / Residential Bertha Accordion Shutter", prepared by Tilteco Inc., dated April 12, 2002, sheets 1 through 10 of 10, signed and sealed by Walter A. Tillit, Jr., P.E.

B. **TESTS**

See Association's generic approval number 98-0103. 1.

C. CALCULATIONS

See Association's generic approval number 98-0103. 1.

D. MATERIAL CERTIFICATIONS

See Association's generic approval number 98-0103.

E. **STATEMENTS**

- Release letter issued by the American Shutter Systems Association, Inc., dated March 1. 29, 2002, certifying this product to meet the criteria of product tested and approved, and allowing QMI Security Solutions to use the test results approved under Miami-Dade County Approval No. 98-0103, signed by Ms. Trudy Kip. 2.
- Acknowledgment letter by QMI Security Solutions dated April 01, 2002, signed by Mr. James V. Miller.
- Letter by Tilteco Inc., dated April 18, 2002, certifying that the drawing (No. 02-260) 3. prepared for QMI Security Solutions, signed and sealed by Mr. Walter A. Tillit, Jr., P.E., is engineering wise identical to ASSA's generic drawing (No. 98-209).
- Acceptance Letter issued to Mr. James V. Miller on May 07, 2002, and returned 4. signed by Mr. James V. Miller on May 08, 2002, indicating to please issue the proposed Notice of Acceptance as submitted and reviewed.

2. **NEW EVIDENCE SUBMITTED**

A. **DRAWINGS**

Drawing No. 05-129, titled "ASSA/ Residential Bertha Accordion Shutter", sheets 1 through 10 of 10, and sheet 1A of 10, prepared by Tilteco, Inc., dated 06/01/2005, last revision #1 dated June 01, 2005, signed and sealed by Walter A. Tillit Jr., P.E.

> Helmy A. Makar, P. E. **Product Control Examiner** NOA No 05-0817.06

Expiration Date: 05/10/2007 Approval Date: 10/06/2005

QMI

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

- B. TESTS
 - 1. See Association's generic approval under 05-0167.
- C. CALCULATIONS
 - 1. See Association's generic approval under 05-0167.
- D. QUALITY ASSURANCE
 - 1. By Miami-Dade County Building Code Compliance Office.
- E. MATERIAL CERTIFICATIONS
 - 1. See Association's generic approval under 05-0167.
- F. STATEMENTS
 - 1. Letter by Tilteco Inc., dated June 13, 2005, certifying that the drawing (No. 05-129) prepared for QMI, signed and sealed by Mr. Walter A. Tillit, Jr., P.E., is engineering wise identical to ASSA's generic drawing (No. 05-124).

Helmy A. Makar, P. E.

Product Control Examiner NOA No 05-0817.06

Expiration Date: 05/10/2007 Approval Date: 10/06/2005

GENERAL NOTES:

1. ACCORDION SHUTTER SHOWN ON THIS PRODUCT APPROVAL DOCUMENT HAS BEEN VERIFIED FOR CODE COMPLIANCE IN ACCORDANCE WITH THE 2004 EDITION OF THE FLORIDA BUILDING CODE. DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1620 OF THE ABOVE MENTIONED CODE. IN ORDER TO VERIFY THAT COMPONENTS AND ANCHORS ON THIS P.A.D. AS TESTED WERE NOT OVER STRESSED, A 33% INCREASE IN ALLOWABLE

STRESS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS. A DURATION FACTOR CD=1.60 WAS USED FOR VERIFICATION OF

ACCORDION SHUTTER'S ADEQUACY FOR IMPACT AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.1.4 OF THE ABOVE MENTIONED CODE AS PER ATL REPORT # 0902.01-98 AND 0701.01-05, PER TAS-201, TAS-202, AND TAS-203 PROTOCOLS.

- 2. STAINLESS STEEL SHEET METAL SCREWS USED AT LOUVER PIN SHALL BE # 10 x 3", 410-HT MINIMUM SERIES WITH 135.0 ksi YIELD POINT AND 180 ksi TENSILE STRENGTH. SCREWS SHALL BE COATED WITH XYLAN 5000 SERIES FLUOROPOLYMER COATINGS AS MANUFACTURED BY WHITFORD CO, BOX 507 WEST CHESTER PA. 19381.
- 3. ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T6 ALLOY.
- 4. ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 SERIES WITH 50 ksi YIELD STRENGTH AND 90 ksi TENSILE STRENGTH OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018.
- 5. ALL ALUMINUM POP RIVETS TO BE 5052 ALUMINUM ALLOY WITH ALUMINUM MANDREL.
- 6. BOLTS TO BE 2024-T4 ALUMINUM ALLOY GALVANIZED OR STAINLESS STEEL WITH 35 ksi MINIMUM MINIMUM YIELD
- 7. ANCHORS TO WALL SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)

(A) TO EXISTING POURED CONCRETE:

- 1/4" TAPCON ANCHORS, AS MANUFACTURED BY I.T.W. BUILDEX.
- 1/4" ZAMAC NAILIN ANCHORS, AS MANUFACTURED BY POWERS FASTENERS, INC.

- 1/4" x 7/8" CALK-IN AS MANUFACTURED BY POWERS FASTENERS. NOTES:

- A.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS AND ZAMAC NAILIN INTO POURED CONCRETE IS 1 3/4".
- A.2) 1/4" x 7/8" CALK-IN ANCHORS SHALL BE ENTIRELY EMBEDDED INTO THE POURED CONCRETE. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. 1/4" Ø-20 SCREWS USED SHALL BE 1 1/2" LONG MINIMUM SHOULD STUCCO EXIST.
- A.3) IN CASE THAT PRECAST STONE, PRECAST CONCRETE PANELS, OR PAVERS BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS. ANCHORAGE SHALL BE AS INDICATED ON NOTES A.1 & A.2 ABOVE.
- TO EXISTING CONCRETE BLOCK WALL:
- 1/4" # TAPCON ANCHORS AS MANUFACTURED BY I.T.W. BUILDEX.
- 1/4" & ZAMAC NAILIN ANCHORS AS MANUFACTURED POWERS FASTENERS, INC.
- 1/4" x 7/8" CALK-IN AS MANUFACTURED BY POWERS FASTENERS, INC. NOTES:
- B.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS, AND ZAMAC NAILIN ANCHORS INTO THE CONCRETE BLOCK UNIT SHALL BE 1 1/4".
- B.2) 1/4"ø x 7/8" CALK-IN ANCHORS SHALL BE ENTIRELY EMBEDDED INTO THE CONCRETE BLOCK UNIT. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. 1/4" Ø-20 SCREWS USED SHALL BE 1 1/2" LONG MINIMUM SHOULD STUCCO EXIST.
- B.3) IN CASE THAT PRECAST STONE OR PRECAST CONCRETE PANELS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS. ANCHORAGE SHALL BE 1 1/4" MINIMUM FOR ANCHORS MENTIONED IN B.1.), & 7/8" FOR ANCHORS MENTIONED IN B.2.).
- ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
- 8. THIS RESIDENTIAL ACCORDION SHUTTER SYSTEM IS PATENT PENDING. COMPONENTS OF THIS APPROVAL ARE COVERED IN WHOLE OR PART BY U.S. PATENT ISSUED TO EASTERN METAL SUPPLY, INC.
- 9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE WHERE SHUTTER IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE. THIS SHUTTER SHALL ONLY BE ATTACHED TO CONCRETE, BLOCK OR WOOD FRAME BUILDINGS.
- 10. EACH UNIT MUST BEAR A PERMANENT LABEL IN A VISIBLE PLACE WITH A WARNING NOTE INSTRUCTING THE TENANT OR HOME OWNER THAT ALL LOCKING PINS, AS WELL AS BOTH LOCKERS MUST BE PROPERLY INSTALLED & BOLTED DURING PERIODS OF HURRICANE WARNING.
- 11. SHUTTER'S MANUFACTURER LABEL SHALL BE PLACED ON THE EXPOSED SURFACE OF THE FEMALE LOCK SLAT (COMPONENT) (DOR (D) ONE LABEL SHALL BE PLACED FOR EVERY OPENING, LABEL SHALL READ AS FOLLOWS: ITASCA, ILLINOIS MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED.

- 12. (a) THIS PRODUCT APPROVAL DOCUMENT (P.A.D.) PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; i.e. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.A.D.
- (b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION, INCLUDING LIFE SAFETY OF THIS PRODUCT BASED ON THIS PRODUCT APPROVAL PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR'S RESPONSIBILITY.
- (c) THIS PRODUCT APPROVAL DOCUMENT WILL BE CONSIDERED INVALID IF MODIFIED.
- (d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.A.D. ENGINEER OF RECORD, ACTING AS DELEGATED ENGINEER TO THE P.A.D. ENGINEER, SHALL SUBMIT TO THIS LATTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.
- (e) THIS P.A.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER THAT PREPARED

PRODUCT REVISED as complying with the Florida Acceptance No 05 - 0817.06 **Buiding Code** Expiration Pate 05/10/2007

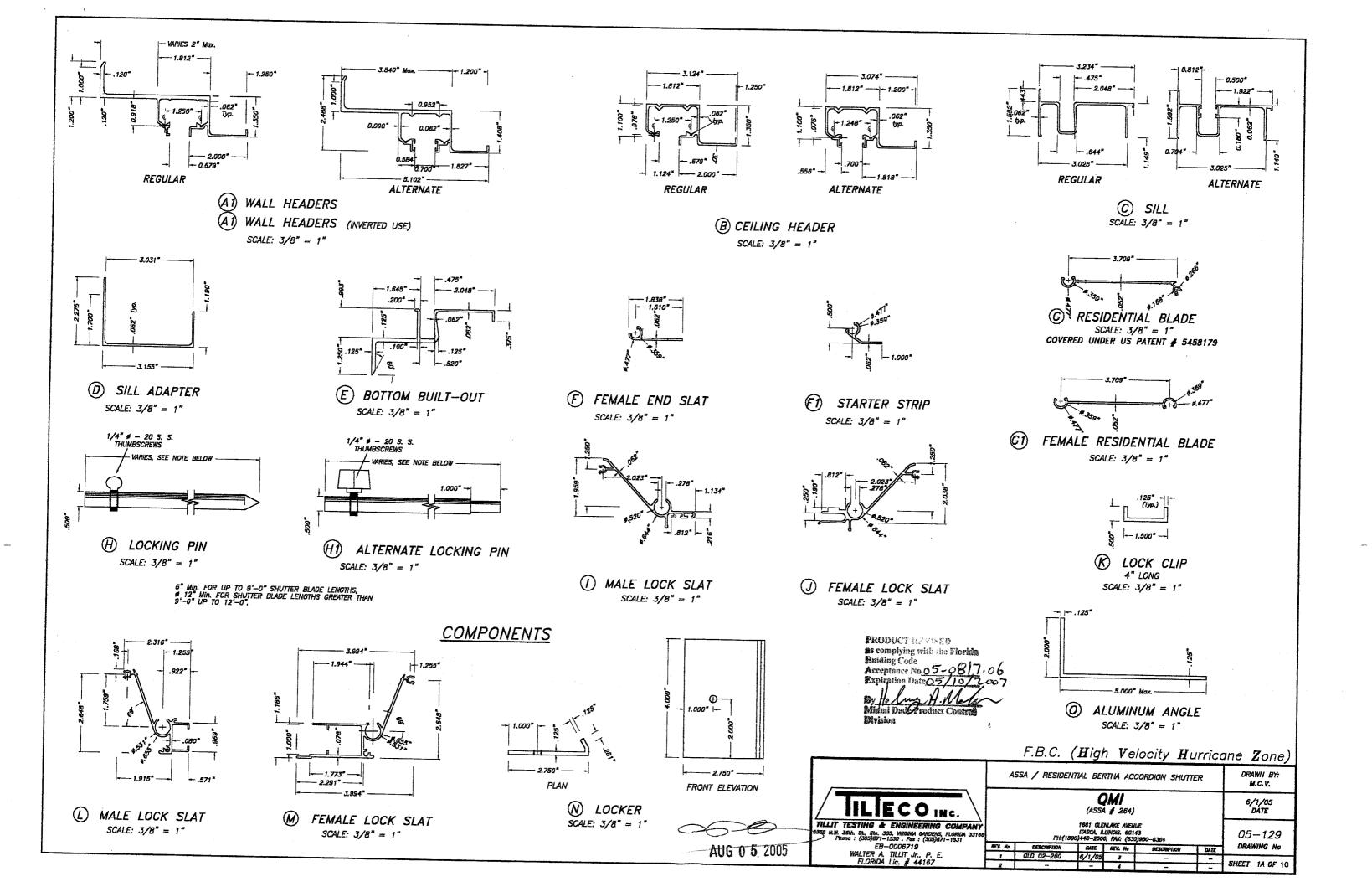
Miami Dade Product Control

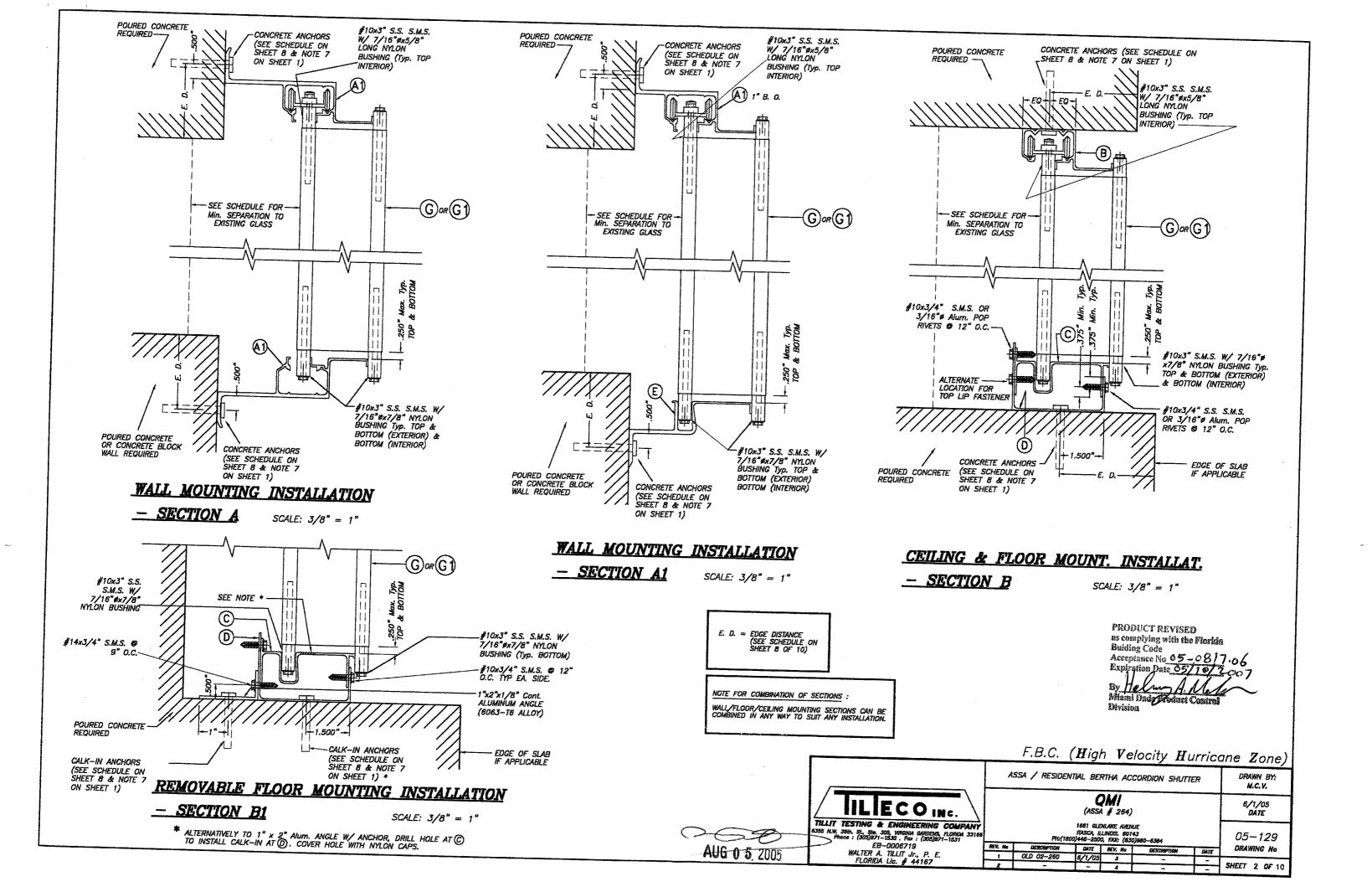
Division /

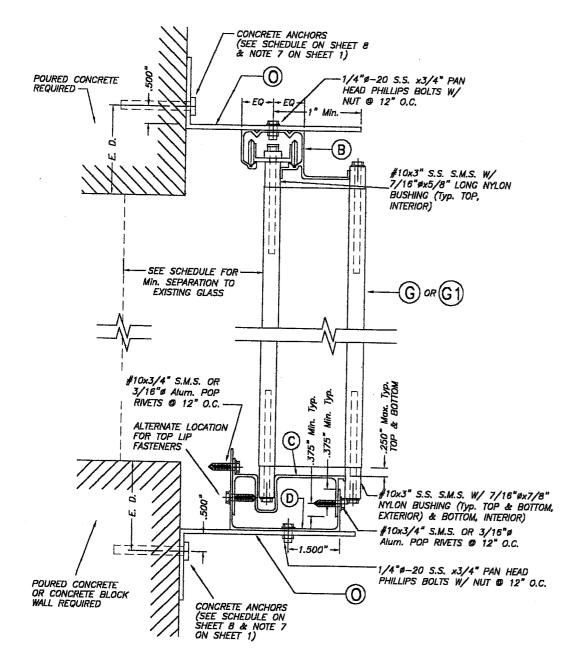
F.B.C. (High Velocity Hurricane Zone)

DRAWN BY: ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER M.C.V. OMI 6/1/05 IILIECO INC. (ASSA # 284) 1881 CLEMAKE AVENUE TILLIT TESTING & ENGINEERING COMPANY ITASCA, ILLINOIS, 60143 PH:(1800)446-2500, FAX: (630)9 05-129 8355 N.W. 36th. St., Ste. 305, YIRGINIA GARDENS, FLORIDA 33166 Phone : (308)871—1530 , Fax : (305)871—1531 DRAWING No EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167 REV. No DESCRIPTION DATE REV. No DATE OLD 02-286 SHEET 1 OF 10

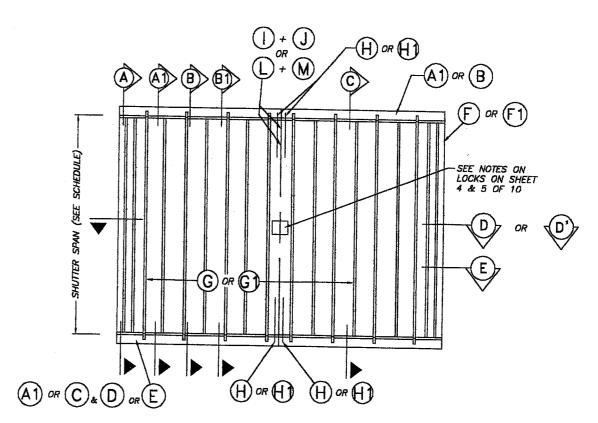
AUG 0 5 2005







WALL MOUNTING INSTALLATION (BUILD—OUT) — SECTION C SCALE: 3/8" = 1'



TYPICAL ELEVATION N. T. S.

E. D. = EDGE DISTANCE (SEE SCHEDULE ON SHEET 8 OF 10)

NOTE FOR COMBINATION OF SECTIONS :

WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 05 - 08 17 . 0 6
Expiration Date 05 / 10 / 2007

DRAWN BY:

6/1/05 DATE

05-129 DRAWING No

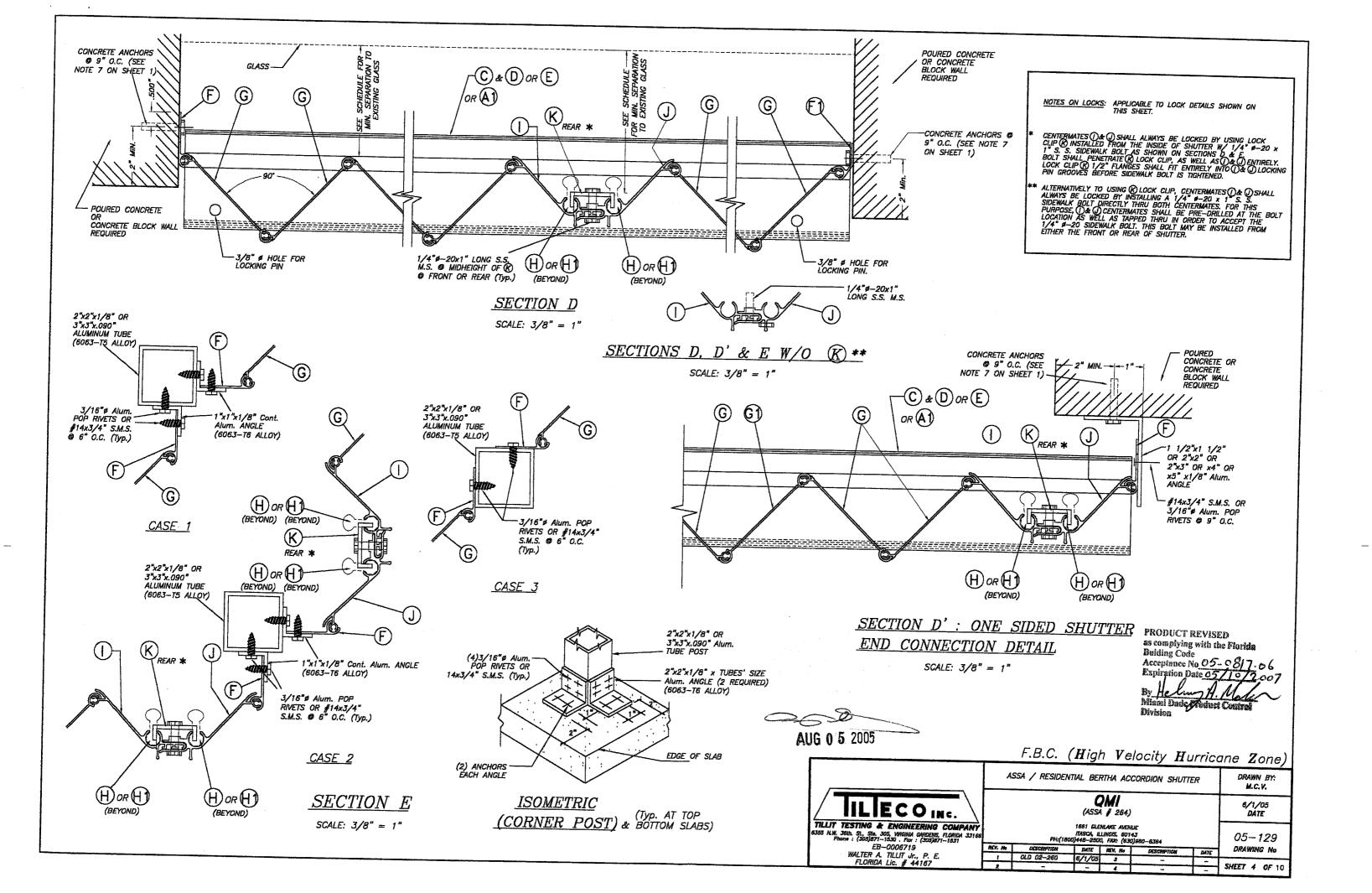
SHEET 3 OF 10

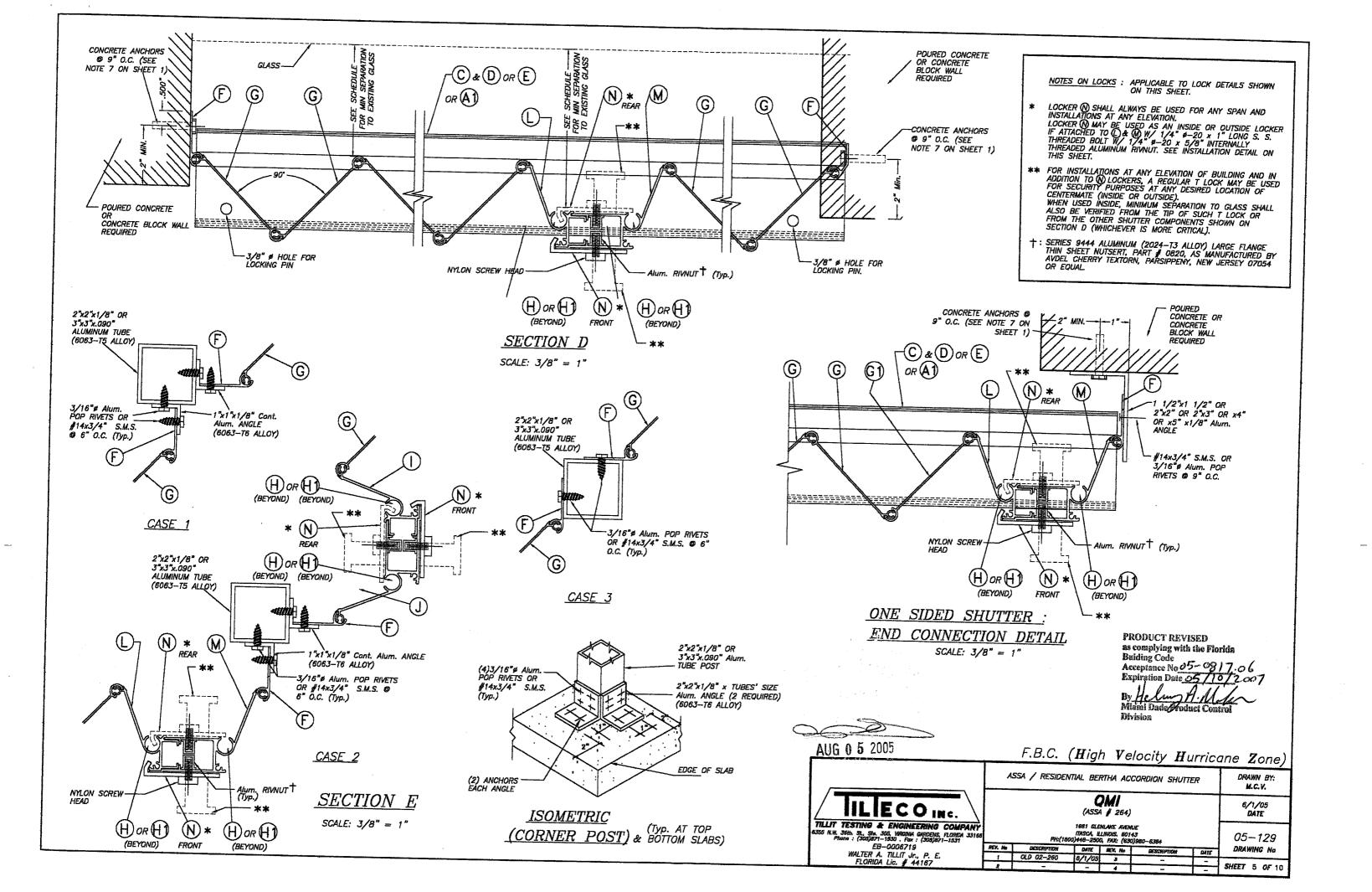
By He Lin H. Mel Miami Dady Product Control Division

F.B.C. (High Velocity Hurricane Zone)









MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING MAXIMUM SPAN "L" SCHEDULE.

(VALID FOR SECTIONS A, A1 & C ON SHEET 2 & 3 OF 10).

NOTE: DESIGN PRESSURE RATING CORRESPONDS ONLY TO NEGATIVE PRESSURE (SUCTION) LOADS, IN ACCORDANCE WITH ASCE 7–98 CRITERIA FOR A GIVEN OPENING.

IF NEGATIVE PRESSURE VALUES COMPLY WITH THE REQUIRED PRESSURE FOR THE OPENING, THE POSITIVE PRESSURE WILL AUTOMATICALLY QUALIFY AND NEED NOT TO BE CHECKED.

MAXIMUM DESIGN LOAD "W" (p.s.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)			
" (p.s.//	(1.17	•	**		
40.0	. 12'-1"	3 7/8"	3*		
42.5	11'-11"	3 7/8"	3*		
45.0	11'-9"	3 7/8"	3*		
47.5	11*-7"	3 7/8"	3"		
50.0	11*-5"	3 7/8"	3"		
52.5	11'-1"	3 7/8"	3" 3"		
55.0	10'-10"	3 7/8"			
<i>57.</i> 5	10'-7"	3 7/8"	3"		
60.0	10'-5"	3 7/8"	3*		
62.5	10'-2"	3 7/8"	3"		
65.0	10'-0"	3 7/8"	3*		
67.5	9'-10" 3 7/8"		3"		
70.0	9'-7"	3 7/8"	3"		
72.5	9'-5"	3 7/8"	3"		
75.0	9'-4"	3 7/8"	3"		
77.5	9'-2"	3 7/8"	3"		
80.0	9'-0"	3 7/8"	3"		
82.5	8'-9"	3 7/8"	3"		

MAXIMUM DESIGN LOAD	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)			
"W" (p.s.f.)		,	**		
85.0	8'-6"	3 7/8"	3"		
87.5	8'-3"	3 7/8"	3"		
90.0	8'~0"	3 3/8"	3"		
92.5	7'-9"	3 3/8"	3*		
95.0	7'-7"	3 3/8"	3"		
97.5	7'-5"	3 3/8"	3"		
100.0	7'-2"	3 3/8"	3"		
102.5	7'-0"	3 3/8"	3"		
105.0	.0 6'-10" 3 3/8"	3 3/8"	3"		
107.5	6'-8"	3 3/8"	3"		
110.0	6'-7"	3 3/8"	3"		
112.5	6'-5"	3 3/8"	3"		
115.0	6'~3"	3 3/8"	3"		
117.5	6'-2"	3 3/8"	3"		
120.0	6'-0"	3 3/8"	3"		
122.5	5'-11"	3 3/8"	3"		
125.0	5'-9"	3 3/8"	3"		
127.5	5'-8"	3 3/8"	3"		
130.0	5'-6"	3 3/8"	3"		
132.5	5'-5"	3 3/8"	3"		
135.0	5'-4"	3 3/8"	3"		
137.5	5'-3"	3 3/8"	3"		

MAXIMUM DESIGN LOAD "W" (p.s.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)		
π (p.s.i.)		*	**	
140.0	5'-2"	3 3/8"	3"	
142.5	5'-1"	3 3/8"	3"	
145.0	5'-0"	3 3/8"	3"	
147.5	4'-11"	3 3/8"	3"	
150.0	4'-10"	3 3/8"	3"	
152.5	4'-9"	3 3/8"	3"	
155.0	4'-8"	3 3/8"	3*	
157.5	4'-7"	3 3/8"	3"	
160.0	4'-6"	3 3/8"	3"	
182,5	4'-5"	3 3/8"	3"	
165.0	185.0 4'-4" 3		3"	
167.5	187.5 4'-4" 3 3/8		3*	
170.0	4'-3"	3 3/8"	3"	
172.5	4'-2"	3 3/8"	3*	
175.0	4'-1"	3 3/8"	3"	
177.5	4'-1"	3 3/8"	3"	
180.0	4'-0"	3 3/8"	3"	

TABLE 1:

MINIMUM SEPARATION BETWEEN GLASS AND SHUTTER FOR A GIVEN SHUTTER SPAN "L" FOR SHUTTERS INSTALLED WITHIN THE FIRST 30'-0" ABOVE GRADE OF A GIVEN BUILDING, 30'-0" ELEVATION SHALL BE MEASURED AT BOTTOM OF SHUTTER SEPARATION TO BE MEASURED AS INDICATED ON SECTION D, SHEET 4 OF 10.

SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION
LESS OR EQUAL THAN 8'-0"	3 3/8"
>8'-0" TO 12'-0"	3 7/8"

PRODUCT REVISED as complying with the Florida **Buiding Code**

Acceptance No05-08/7.06
Expiration Date 05/10/2007

By Helm A. Meles Miami Dade Product Control Division Division

* FOR SHUTTERS INSTALLED WITHING THE FIRST 30'-0" ELEVATION OF BUILDING. SEE TABLE 1 FOR MINIMUM SEPARATION TO GLASS FOR SPANS SHORTER THAN THE MAXIMUM ALLOWED SHOWN ON SCHEDULE.

** FOR SHUTTERS INSTALLED ABOVE 30'-0" ELEVATION OF BUILDING, MEASURED AT BOTTOM OF SHUTTER

F.B.C. (High Velocity Hurricane Zone)

TILLIT TESTING & ENGINEERING COMPANY 6355 TOW. Jelh. St., Sta. 305, VARRIUM GARDENS, FLORIDA 33166 Phana: (305)871-1530 . Pax: (305)871-1531 AUG 0 5 2005 EB-0006719
WALTER A. TILLIT Jr., P. E.
FLORIDA Lig. # 44167

ASSA / PESIDENTIAL DEPTH	
ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	DRAWN BY: M.C.V.
QMI (ASSA # 264)	6/1/05 DATE
1881 GLENLANE AVENUE ITASCA, ILLINOIS, 80143	05-129
REV. No DESCRIPTION DATE REV. NO DESCRIPTION DATE	DRAWING No
1 OLD 02-260 6/1/05 3	
1 S	SHEET & OF 1

MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING MAXIMUM SPAN "L" SCHEDULE.

(VALID FOR SECTION B & B1 ON SHEET 2 OF 10).

NOTE: DESIGN PRESSURE RATING CORRESPONDS ONLY TO NEGATIVE PRESSURE (SUCTION) LOADS, IN ACCORDANCE WITH ASCE 7-98 CRITERIA FOR A GIVEN OPENING.

IF NEGATIVE PRESSURE VALUES COMPLY WITH THE REQUIRED PRESSURE FOR THE OPENING, THE POSITIVE PRESSURE WILL AUTOMATICALLY QUALIFY AND NEED NOT TO BE CHECKED.

MAXIMUM DESIGN LOAD "W" (p.s.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)			
n (p.s.i.)	-1107 E (7E)	*	**		
40.0	12'-0"	3 7/8"	3"		
42.5	11'-11"	3 7/8"	3"		
45.0	11'-9"	3 7/8"	3"		
47.5	11'-7"	3 7/8"	3*		
50.0	11'-5"	3 7/8"	3"		
52.5	11'-3"	3 7/8"	3" 3"		
<i>\$5.0</i>	11'-1"	3 7/8"			
57.5	10'-10"	3 7/8"	3"		
60.0	10'-7"	3 7/8"			
62.5	10'-4"	3 7/8"	3"		
65.0	10'-2" 3 7/8"		3"		
67.5	10'-0"	3 7/8"	3"		
70.0	9'-10"	3 7/8"	3"		
72.5	9'-8"	3 7/8"	3"		
75.0	9'-6"	3 7/8"	3"		
77.5	9'-4"	3 7/8"	3"		
80.0	9'-2"	3 7/8"	3*		
82.5	9'-0"	3 7/8"	3"		

MAXIMUM DESIGN LOAD "W" (p.g.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)			
# (p.s.r.)		*	**		
85.0	8'-11"	3 7/8"	3"		
87.5	8'-9"	3 7/8"	3"		
90.0	8'-5"	3 7/8"	3"		
92.5	8'-3"	3 7/8"	3"		
95.0	8'-1"	3 7/8"	3"		
97.5	7'-10"	3 3/8"	3"		
100.0	7'-8"	3 3/8"	3"		
102.5	7'-6"	3 3/8*	3"		
105.0	7'-3"	3 3/8"	<i>3</i> "		
107.5	7'-1"	3 3/8"	3"		
110.0	6'-11"	3 3/8"	3"		
112.5	6'-10"	3 3/8"	3"		
115.0	6'-8"	3 3/8"	3"		
117.5	6'-6"	3 3/8"	3"		
120.0	6'-5"	3 3/8"	3*		
122.5	6'-3"	3 3/8"	3"		
125.0	6'-1"	J 3/8"	3"		
127.5	6'-0"	3 3/8"	3"		
130.0	5'-11"	3 3/8"	3"		
132.5	5'-9"	3 3/8"	3"		
135.0	5'-8"	3 3/8"	3"		
137.5	5'~7"	3 3/8"	3"		

MAXIMUM DESIGN LOAD "W" (p.s.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)			
W (p.s./.)		*	**		
140.0	5'-6*	3 3/8"	3"		
142.5	5'-4"	3 3/8"	3"		
145.0	5'-3"	3 3/8"	3"		
147.5	5'-2"	3 3/8"	3"		
150.0	5'-1"	3 3/8"	3"		
152.5	5'-0"	3 3/8"	3"		
155,0	4'-11"	3 3/8"	3"		
157.5	4'-10"	3 3/8"	3"		
160,0	4'-9"	3 3/8"	3"		
162.5	4'-8"	3 3/8"	3"		
165,0	4'~8*	4'-8" 3 3/8"			
167,5	4'-7"	3 3/8"	3"		
170.0	4'-6"	3 3/8"	3"		
172.5	4'-5"	3 3/8"	3"		
175.0	4'-4"	3 3/8"	3"		
177.5	4'-4"	3 3/8"	3"		
180.0	4'-3"	3 3/8"	3"		

TABLE 1:

MINIMUM SEPARATION BETWEEN GLASS AND SHUTTER FOR A GIVEN SHUTTER SPAN "L" FOR SHUTTERS INSTALLED WITHIN THE FIRST 30'-0" ABOVE GRADE OF A GIVEN BUILDING. 30'-0" ELEVATION SHALL BE MEASURED AT BOTTOM OF SHUTTER SEPARATION TO BE MEASURED AS INDICATED ON SECTION D, SHEET 4 OF 10.

SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION
LESS OR EQUAL THAN 8'-0"	3 3/8"
>8'-0" TO 12'-0"	3 7/8"

PRODUCT REVISED as complying with the Florida Buiding Code

Acceptance No 05 - 0817.06 Expiration Date 05/10/2007

Miami Dade Groduct Control

* FOR SHUTTERS INSTALLED WITHING THE FIRST 30'-0" ELEVATION OF BUILDING. SEE TABLE 1 FOR MINIMUM SEPARATION TO GLASS FOR SPANS SHORTER THAN THE MAXIMUM ALLOWED SHOWN ON SCHEDULE.

** FOR SHUTTERS INSTALLED ABOVE 30'-0" ELEVATION OF BUILDING, MEASURED AT BOTTOM OF SHUTTER

TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. John, St., Ste. 305, VIRGINIA GARDENS, FLORIDA J3166 Phone : (305)871-1530 . Fax : (305)871-1531 AUG 0 5. 2005 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167

F.B.C. (High Velocity Hurricane Zone) ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER DRAWN BY: M.C.V. QMI 6/1/05 DATE (ASSA # 264) 1861 GLENLAKE AVENUE HASCA, ILLINOIS, 80143 05-129 REV. No DESCRIPTION DATE REV. No DRAWING No 1 OLD 02-260 6/1/05 SHEET 7 OF 10

MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING MAXIMUM ANCHOR SPACING (In.) SCHEDULE. +

	<u> </u>	SECTIONS A. AI, C			SECTIONS A. A.I. C	?		SECTIONS B. & B) j
MAXIMUM DESIGN LOAD "W" (p.s.f.)	WALL MOUNTING INSTALLATION AT TOP OR BOTTOM (TO CONCRETE)			WALL MOUNTING INSTALLATION AT BOTTOM (TO MASONRY)		CEILING & FLOOR MOUNTING INSTALLATION AT TOP OR BOTTOM (TO CONCRETE)			
	NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 2	NOTE 3
FROM	9"	9"	9"	9"	8"	6 1/2"	9"	6"	4 1/2"
40.0 TO 62.5	9*	9"	9"	9"	5 1/2"	4 1/2"	9*	8"	6 1/2"
FROM	9*	9"	8"	9"	6 1/2"	6"	8 1/2"	5"	4 1/2"
62.6 TO 75.0	9"	9"	6"	8"	4 1/2"	4"	9"	6 1/2"	6"
FROM	9"	7"	7"	9"	5 1/2"	5 1/2"	6 1/2"	4"	-
75.1 TO 92.5	9*	9"	9"	6 1/2"	3 1/2"	3 1/2"	9"	5 1/2"	5 1/2"
FROM	9"	5"	-	7"	4 1/2"	-	5"	4"	_
92.6 TO 120.0	9"	9*		5"	4"	-	7*	5 1/2"	
FROM	5"	5"		4 1/2"	4 1/2"	-	4"	4"	
20.1 TO 180.0	9"	9"	-	_	-	_	5 1/2"	5 1/2"	

ANCHOR SPACING LEGEND

- (1) Max. ANCHOR SPCG. VALID FOR SPANS OF 5'-0" OR LESS.
- (2) Max. ANCHOR SPCG. VALID FOR SPANS GREATER THAN 5'-0" TO 8'-6".
 (3) Max. ANCHOR SPCG. VALID FOR SPANS GREATER THAN 8'-6" TO Max. ALLOWED.

NOTES ON ANCHOR SPACING SCHEDULE

ZAMAC NAILIN

TAPCON OR CALK-IN

ANCHOR SPACING LEGEND

SEE SHEET 9 & 10 OF 10 FOR ANCHOR TYPE & SPACING FOR INSTALLATIONS INTO WOOD FRAME BUILDINGS.

MAXIMUM ANCHOR SPACINGS ARE VALID FOR 3 1/2" EDGE DISTANCE.
FOR E. D. LESS THAN 3 1/2", REDUCE ANCHOR SPACING BY MULTIPLYING SPACINGS SHOWN ON SCHEDULE BY THE FOLLOWING FACTORS. (Min. E. D. FOR CALK-IN IS 2 1/2").

THIS OPERATION SHALL ONLY BE PERFORMED WHEN REQUIRED SPACING RESULTS INTO A MINIMUM OF 3" O.C.

ACTUAL E. D.=	FACTOR		
EDGE DISTANCE	TAPCON / ZAMAC NAILIN	CALK-IN	
3"	.86	. <i>75</i>	
2 1/2"	.71	.50	
2"	.50		

PRODUCT REVISED as complying with the Florida **Buiding Code**

Acceptance No 05-08/7.

TILLIT TESTING & ENGINEERING COMPANY

\$355 M.W. JSth. St., Ste. 305, VRCHUM CAMPDINS, FLORIDA 33166

Phone: (305)871-1530 . Fax: (305)871-1531

EB-0006719

WALTER A. TILLIT Jr., P. E.
FLORIDA Lic. # 44167

REV. No

F.B.C. (High Velocity Hurricane Zone) DRAWN BY: ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER 6/1/03 DATE QMI (ASSA # 264) 1861 GLENLAKE AVENUE ITASCA, ILLINOIS, 80143 05-129 DATE REV. No BESCRIPTION DRAWING No 1 OLD 02-260 6/1/05 3 SHEET 8 OF 10

AUG 0 5 2005

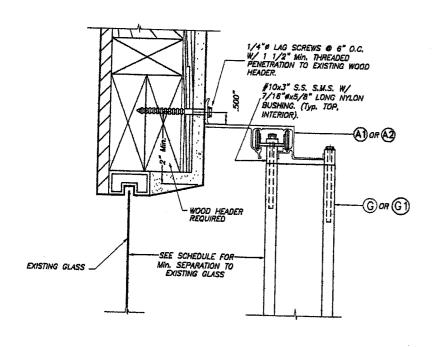
INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS

NOTES:

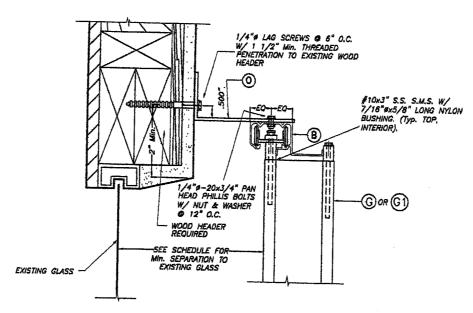
- INSTALLATIONS ARE ONLY VALID FOR INSTALLATIONS WITH DESIGN WIND LOADS LESS OR EQUAL THAN 75 p.s.f. AND 9'-0" Mox. SHUTTER SPAN.
- 2. FOR NEW WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN PINE No. 2, W/ SPECIFIC DENSITY OF 0.55 OR EQUAL.

NOTE FOR COMBINATION OF SECTIONS:

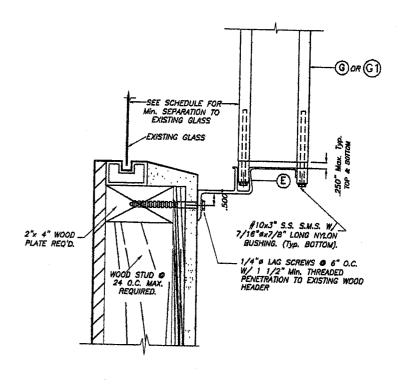
WALL MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.



ALTERNATIVE 1



ALTERNATIVE 2



ALTERNATIVE 3

REV. No

DESCRIPTION

PRODUCT REVISED as complying with the Florida **Buiding Code** Acceptance No 05-0817.06 Expiration Date 05/10/2007

By He lun A. M. Miami Dado Podaci Control

WALL MOUNTING INSTALLATION - SECTION A

SCALE: 1/4" = 1"

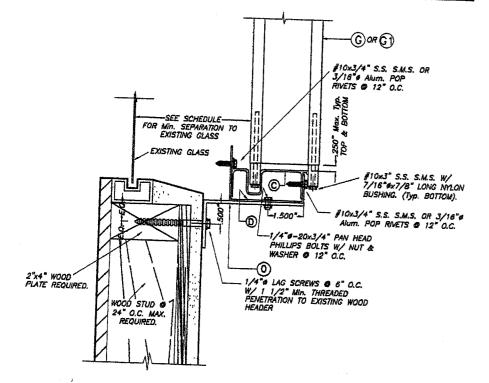
ILLECO INC. TILLIT TESTING & ENGINEERING COMPANY 8355 N.W. J&th. St., Ste., JOS, WRENNA GARDENS, FLORIDA 31166 Phone : (305)871-1530 . For : (308)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44187

F.B.C. (High Velocity Hurricane Zone) ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER DRAWN BY: M.C.V. QMI 6/1/05 DATE (ASSA # 264)

1661 GLENLAKE AVENUE 05-129 ITASCA, ILLINOIS, 60143 DRAWING No DATE REV. No 1 OLD 02-250 SHEET 9 OF 10

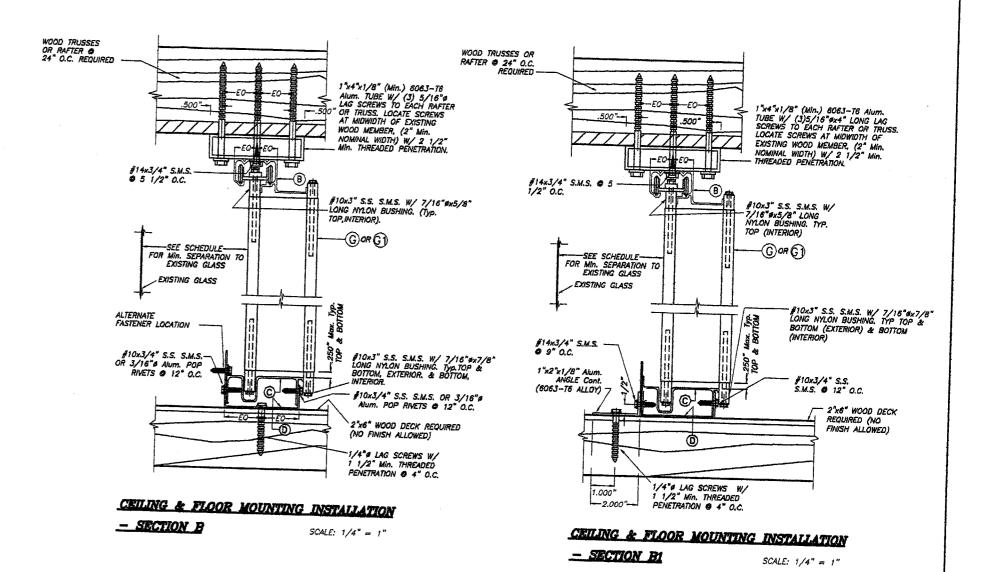
AUG 0 5 2005

INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS



ALTERNATIVE 5

SCALE: 1/4" = 1"



WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

NOTES :

- 1. INSTALLATIONS ARE ONLY VALID FOR INSTALLATIONS WITH DESIGN WIND LOADS LESS OR EQUAL THAN 75 p.s.f. AND 9'-0" Max. SHUTTER SPAN.
- 2. FOR NEW WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN PINE No. 2, W/ SPECIFIC DENSITY OF 0.55 OR EQUAL.

PRODUCT REVISED as complying with the Florida **Buiding Code** Acceptance No 05-0817.06 Expiration Date 05/15/2007 Miami Dade Product Control Division Division

F.B.C. (High Velocity Hurricane Zone)

ILLECO INC. TILLIT TESTING & ENGINEERING COMPANY 355 N.W. John. St., Sta. 305, VARGINIA GARDENS, FLORIDA 31866 Phane: (305)871-1531 Fax: (305)871-1531 AUG 0 5 2005 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167

ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER DRAWN BY: M.C.V. QMI 6/1/05 DATE (ASSA # 264) 1661 GLENLAKE AVENUE 05-129 ITASCA RLINOIS 60143 REV. Ha DESCRIPTION DATE REV. No DRAWING No OLD 02-260 6/1/05 3 SHEET 10 OF 10